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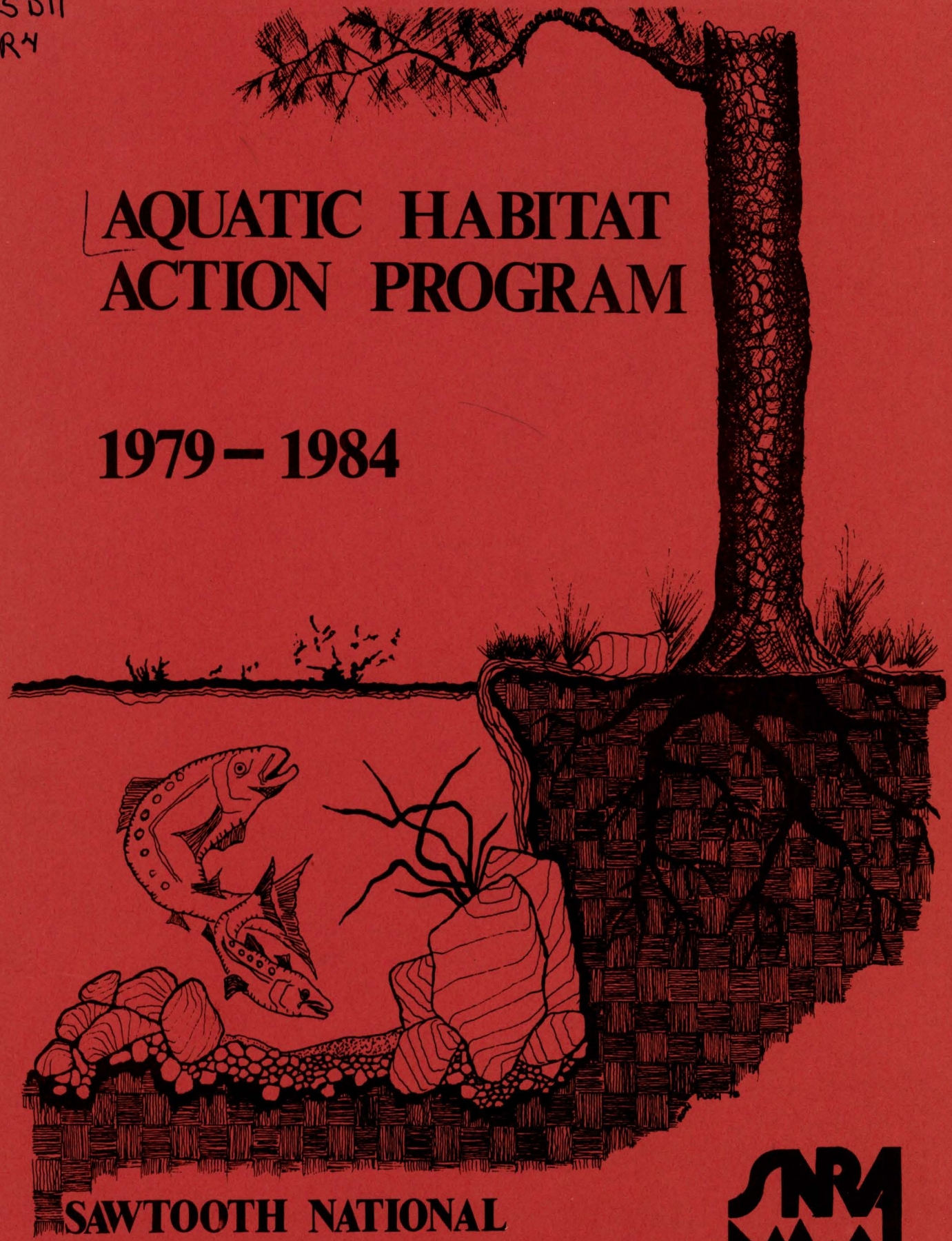
AQUATIC HABITAT ACTION PROGRAM

1979 – 1984



SAWTOOTH NATIONAL RECREATION AREA

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AQUATIC HABITAT ACTION PROGRAM

for the

Sawtooth National Recreation Area

1979-1984

Prepared by

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February 1979

Sawtooth National Recreation Area

Sawtooth National Forest

Forest Service

Aquatic Habitat Action Program

for the

Sawtooth National Recreation Area

1979-1984

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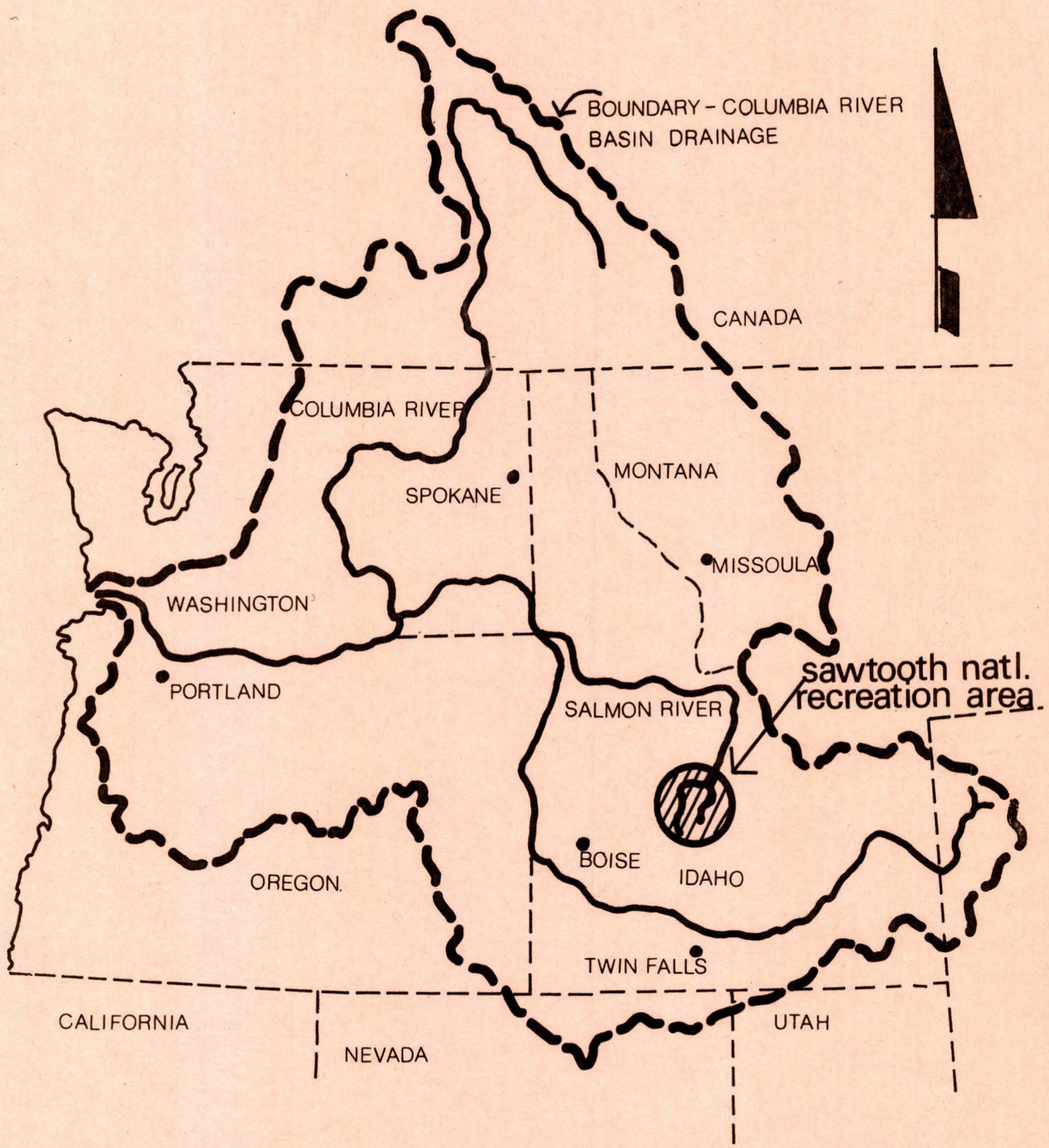

VICINITY AND LOCATION MAP

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PREFACE

The Sawtooth National Recreation Area General Management Plan provides direction concerning fishery and aquatic programs. It is felt a program expansion is needed to supplement this direction. The Aquatic Habitat Action Program is a document which will set the stage for determining the status and needs of the aquatic habitat and meet established objectives. It was determined that an Environmental Analysis Report was not needed because of the following reasons:

1. The activities and programs outlined in the plan are consistent with the Sawtooth National Recreation Area General Management Plan and accompanying final Environmental Statement.

2. No new direction is created from the above-mentioned document, only clarification and refinement of direction already set has been made.

3. The individual projects resulting from this plan will be evaluated independently by the environmental analysis process and an Environmental Analysis Report will be written when needed.

The original draft of this plan has been reviewed by SNRA personnel. Other reviewers (State and Federal) have responded and this document reflects their comments. A file of the draft reviewed and comments will be kept at the SNRA headquarters.

It is hoped this document will guide effectively a progressive fishery and aquatic program.

INTRODUCTION

The 754,000-acre Sawtooth National Recreation Area, hereafter referred to as the SNRA, is one of the nation's most scenic recreation environments.

This fragile complex of high mountain lakes, broad grassland valleys and crystal clear streams must be managed carefully because it constitutes one of nature's most delicately balanced environments.

Public Law 92-400 established the SNRA on August 22, 1972, and directed management to "...assure the preservation and protection of the natural, scenic, pastoral, and fish and wildlife values and to provide for the enhancement of the recreational values associated therewith..."

The law further directs the Secretary of Agriculture to "...administer the SNRA in accordance with the laws, rules, and regulations applicable to the National Forests in such manner as will best provide (1) the protection and conservation of the salmon and other fisheries; (2) the conservation and development of scenic, natural, historic, pastoral, wildlife, and other values..."

The Congress of the United States recognized the annual run of sockeye and chinook salmon along with steelhead trout to be an outstanding biological feature within the SNRA. These three species of anadromous fish travel more than 800 miles from the Pacific Ocean to the upper Salmon River and its tributaries. All of these species are essential to the Idaho sport fishery program and to sport, Indian and commercial fisheries in the lower Columbia River and the Pacific Ocean.

The preservation of the fishery is dependent on protection of the spawning grounds and migrating fish. Up and downstream migration for 40 years has been severely reduced by Columbia and Snake River dams. However, great strides have recently occurred to improve passage and increase adult returns to the Salmon River. A significant portion of Idaho's wild stock of anadromous fish spawn within the SNRA. Large numbers of young salmon produced on these spawning grounds are destroyed by irrigation diversions and other habitat problems. Diversion losses of fry and smolts have been estimated at 30% to 80% annually. A progressive fishery enhancement program involving the screening of irrigation ditches is proposed to partially restore the anadromous and resident fishery to its former abundance. When this program is combined with other habitat improvement projects, protection and enhancement of the fishery and aquatic resource can be accomplished.

THE FISHERY AND AQUATIC RESOURCE

The aquatic resource of the SNRA represents portions of four major river systems, high glaciated cirque basin lakes and lower morainal lakes. The headwaters of the Salmon, East Fork of the Salmon, North & Middle Forks of the Boise, Queens, South Fork of the Payette and Big Wood River originate on the SNRA and all contain a variety of migratory and resident fish. This forms a recreational hub for related uses of the aquatic resources. Anadromous and resident fish present in the system include:

Chinook salmon	Dolly Varden
Sockeye salmon	Grayling
Kokanee salmon	Whitefish
Steelhead trout	Squawfish
Cutthroat trout	Suckers
Rainbow trout	Redside shiner
Brook trout	Dace
Sunapee trout	Chiselmouth
Golden trout	Sculpin
Lake trout	Lamprey

ANADROMOUS FISH

Within the Sawtooth National Recreation Area, the anadromous fishery includes spring and summer run chinook salmon, sockeye salmon, and steelhead trout. Each of these species involves different management techniques for the fish and their habitat requirements. Traditionally,

fishery programs concerned with the headwaters have been oriented primarily toward chinook salmon and steelhead trout, both highly desireable game and commercial fish. Chinook salmon are also the basis for the Indian subsistence fishery.

The Idaho Department of Fish and Game fish stocking and transportation program will continue to stock anadromous and resident fish into selected waters. Management programs which improve the condition of the anadromous fishery habitat will also generally benefit the resident (non-migratory) species present.

Historically, the Upper Salmon River and its tributaries provided some of the highest quality spawning and rearing habitat for anadromous fish in the State of Idaho. Once these migrant fish stocks were destined to travel over 800 miles to the upper Salmon River spawning grounds on a journey relatively free of obstructions. Now both fish passage and critical life cycle phases essential to their existence are inhibited by Columbia and Snake River dams and degradation of habitat in much of the drainage.

In the Columbia Basin, Indians have utilized the fishery for thousands of years. However, it was not until after the white settlement of the Pacific Northwest that a concentrated commercial fishery began to flourish. The value of the Salmon River was such that a United States Fish Commission survey was conducted between 1894 and 1896. Thousands of anadromous fish then utilized the ancestral spawning grounds in the

headwaters of the Salmon River. Sockeye salmon or "redfish" were the most abundant fish surveyed. The survey was centered around the "Redfish Lakes" which included Redfish, Alturas, Pettit, Yellow Belly, and Stanley Lakes. A cannery was once proposed to harvest these abundant fish. The sockeye, which require a lake to complete their life cycle, have declined from thousands to a remnant run which returns to Redfish Lake. From 1954 to 1966 a range of 11 to 4361 sockeye migrated to Redfish Lake. In recent years the runs have been extremely depressed, but the potential exists to reintroduce them to all historically associated lake systems. These sockeye currently contribute very little, if any, to either the sport or commercial fishery. Chinook salmon and steelhead trout, at the time of the 1894-1896 survey, were very numerous and utilized the Upper Salmon River and every major tributary for spawning. Indian fishery rights were carried forward to the headwaters under the Fort Bridger Treaty of 1868. This treaty is still in effect.

While summer run chinook, sockeye, and steelhead trout have contributed annually to the total fishery, major emphasis has been on chinook and summer steelhead management. Recent regulations on harvest and seasons have been designed to protect the fishery, especially the summer chinook. It is important to note that while the Salmon River spring chinook runs have declined in recent years, spawning success in the headwaters has contributed significantly to the stability of this fishery. This has been documented by redd (spawning nest) trend counts within the SNRA having been recorded for several years by IDF&G in annual "Salmon Spawning Ground Surveys". The steelhead trout fishery is important statewide

although little is utilized in the headwaters. There is potential for increased steelhead runs to the headwaters. Major local impacts currently are the result of irrigation diversions and related instream flow problems. Beside local impacts, many factors have contributed to the decline of the anadromous fishery, the most prominent being the development of the Columbia Basin hydroelectric power. A more detailed account of the Columbia Basin fishery problem as it related to the Salmon River headwaters is covered under a 1977 SNRA report titled Anadromous Fisheries Situation.

RESIDENT FISHERY (GAME AND NON-GAME)

Although receiving less emphasis, the resident fishery provides a vast recreational base for SNRA visitors and is a valuable part of the aquatic resource. Within the SNRA, most rivers, streams and lakes provide very high quality habitat for both game and non-game fish. While the rivers and streams have always contained native fish populations, most high elevation lakes were barren prior to artificial introduction. Since the early 1900's, many species of fish have been introduced and are now part of the fishery. High mountain lakes contribute significantly to the wilderness and backcountry recreation experience. Game species now present in the systems include kokanee salmon (landlocked sockeye), cutthroat, rainbow, brook, sunapee, golden trout, Dolly Varden, grayling and whitefish. Non-game fish include squawfish, suckers, dace, redside shiner, chiselmouth, sculpin and lamprey. The IDF&G stocking program will continue to supplement game fish into selected

waters without natural reproduction or those limited by other environmental factors.

Although the resident fishery is composed of a variety of species, it does not draw national attention as does the anadromous fishery. It does provide the bulk of the recreational fishery and is an extremely important component of the total aquatic resource. Management of the aquatic resource including resident fish habitat will involve activities that are consistent with the anadromous fish programs.

RELATED AQUATIC RESOURCES

The nonfishery aquatic resource has long been recognized for its unique contribution to the area. Many types of streams which are tributaries to the river and lake systems provide a scenic and esthetic environment. Glaciated cirque basins and related geologic formations form many lakes which vary in size and elevation. Watershed, aquatic habitat and wildlife are an integral part of the aquatic picture. This, combined with a panorama of pastoral open valley with meandering streams and rivers, provides a resource which greatly complements the background landscape from mountain to valley bottom. Much of the recreational day use on the SNRA is centered around this resource. Angling, boating, floatboating, kyacking and swimming offer a variety of experiences for the recreationist unique to this area in Idaho.

High quality watershed and improved habitat is a necessity for

continued survival of the fishery and related recreational endeavors for which the SNRA was created.

SUMMARY OF THE FISHERY AQUATIC RESOURCE

Many environmental problems impact the resources, including Columbia and Snake River dams, commercial and sport fishing, flood control projects, highway developments, logging, dredging and other mining activities, grazing, agricultural and land development, and irrigation diversions. These impacts have occurred throughout the Columbia Basin. Even after decades of research and problem identification, the end result has been a continual decline of the anadromous and resident fishery. During the past 40 years, the Salmon River fishery has deteriorated to only a small fraction of its former abundance.

However, since conception of the SNRA and the recent conservation and protection trend, the outlook for the Salmon River is promising. Better management of commercial, Indian and sport fishing, technological advances in both upstream and downstream migrant passage at dams, removal of Sunbeam Dam (a barrier 1913-1934), almost complete cessation of mining in the headwaters of anadromous fish streams and improved fish management programs should have improved the fishery resource, especially salmon and steelhead. However, this did not occur within the Sawtooth National Recreation Area. A major reason for this failure appears to be excessive losses of fish migrants which can only be attributed to irrigation diversions. Over 100 miles of streams in the Salmon River

headwaters are impacted by water diversion structures on National Forest, State and private lands. With increased construction technology and equipment availability (increase in diverted water volumes) over the last 40 years, the impact has increased proportionately. Unscreened irrigation diversions and related instream flow problems are the most important factors affecting wild fish production in the Upper Salmon River. Two reports, 1977 and 1978, entitled "Downstream Migrant Fish Screens for Irrigation Ditches, Upper Salmon River Basin, Idaho," by Jack G. Fisher provides a detailed background of the fish screening program. A progressive fishery enhancement program involving the screening of irrigation diversions and the establishing of instream flows would help restore the fishery to meet management goals of this extremely valuable resource. This program would greatly complement the applied research and technological advances being made downriver in the Columbia and Snake Rivers.

Further support for this program would take place in the form of direct habitat improvements for anadromous and resident fish. Removal of log jams, debris and barriers from stream channels along with watershed stabilization projects would enhance habitat quality and quantity. Continued fish planting programs by IDF&G for resident and anadromous fish will support and enhance the aquatic resource.

This program package is proposed to give guidance for cooperation and coordination within and between resource allocation proposals and direct habitat improvements, including fish screens, on the SNRA. The

following program will be a systematic display of decision points and program phase activities that will effectively direct management efforts and provide recommendations for research needs. The most current phase in history for the productive Salmon River fishery is still being written.

ORGANIZATION

The existing organization of concerned agencies will serve the needs of the program. Policy and decision-making responsibilities will be within authorities of the respective agencies and administrative procedures outlined in the General Management Plan (GMP) and related cooperative agreements with other agencies.

To complete the fishery and aquatic resource objectives, a water resource study will be initiated. This will be an interdisciplinary team effort involving all specialists necessary to meet management direction. The screening of irrigation diversion ditches to prevent migrant fish losses is a major consideration of this program.

A technical group will be composed of the National Marine Fisheries Service, Idaho Department of Fish and Game, and the U. S. Forest Service. This group will provide technical guidance, prepare annual operating plans and inventory data collection methodologies, review progress reports, and submit budget proposals. Representatives from the Fish and Wildlife Service and other agencies or organizations will be invited to

join the group as the need arises.

ROLE OF THE IDAHO DEPARTMENT OF FISH AND GAME

The Idaho Department of Fish and Game is responsible for the preservation, protection, management and restoration of fish and wildlife within the State of Idaho. Coordination will be directed under the Memorandum of Understanding dated March 4, 1976 and related supplements.

The objective of the Idaho Department of Fish and Game under the proposed program is to preserve, protect, manage, or restore the various fisheries found on the SNRA. The IDF&G "Policy for Fish" (1975-1990) will be programmed as applicable. Already on-going is the stocking program wherein annually catchable or subcatchable fish are released into many streams and lakes within the SNRA boundaries. IDF&G species plans or programs will be incorporated as input needs develop. On-going projects involving many aspects of the fishery are currently underway. Phase I, II and III will be closely coordinated with Idaho Department of Fish and Game.

ROLE OF THE FISH AND WILDLIFE SERVICE

The Fish and Wildlife Service will act in an advisory capacity to the Sawtooth National Recreation Area in matters pertaining to fishery and aquatic management. Basic coordination will be directed by the Memorandum of Understanding dated October 6, 1960 and related supplements.

ROLE OF NATIONAL MARINE FISHERIES SERVICE

The National Marine Fisheries Service (NMFS) will be involved by reason of their direct programs in funding, technical expertise, interstate coordination, and other activities under the Columbia River Fishery Development Program. SNRA and NMFS fish screen program coordination will be directed by the Memorandum of Understanding dated May 9, 1978. Additional program efforts may be identified under authority of the agencies Memorandum of Understanding dated October 5, 1973.

ROLE OF OTHER AGENCIES AND PRIVATE SECTOR

Private landowners and special interest groups or organizations will be involved in planning programs and procedures as their relative interests become known.

ROLE OF THE FOREST SERVICE

The Forest Service will develop and maintain desirable and necessary aquatic habitat and manage it to meet public needs in concert with other uses of forest and rangeland resources according to the General Management Plan for the SNRA. Special emphasis will be given to the anadromous fishery through the Intermountain Regional Wildlife Action Program. Public Law 92-400 and the Federal and private land regulations, issued thereunder, will support a program to emphasize the anadromous fishery resource.

OBJECTIVES

Develop and maintain a program that will:

1. Optimize a spectrum of fishing and related aquatic opportunities. This Aquatic Habitat Action Program will outline the program for FY 79 - FY 84.

2. Improve aquatic habitat that will sustain and maintain both anadromous and resident fisheries as well as other aquatic life in rivers, streams and lakes.

3. Continue cooperative relationships with National Marine Fisheries Service, Idaho Department of Fish and Game, and other agencies.

PLANNING STRUCTURE

In order to incorporate the SNRA into a logical planning unit for purposes of applying management programs, the main drainages and their code numbers devised by the Intermountain Region (R-4 General Aquatic Wildlife System) will be used. Previous codes or other agency systems will be cross referenced. Individual drainages will be numbered in a logical order. This classification will provide for meaningful display of the aquatic resource and its unique management needs.

The program has been planned with a modified version of the Convergence

Planning Technique. This technique utilizes some of the general features of systems and planning approaches, but avoids the requirements of certainty in achievement and rigidity of time scheduling. It is sequentially developed on the basis of phases and activity items which will attain the program objectives. Phase I will insure that the present fishery and aquatic resource is maintained and a progressive action program initiated. Phase II is concerned with protection, enhancement and habitat improvement of the fishery and aquatic resource. Phase III will involve monitoring and maintenance of the fishery and aquatic resource. An introduction will accompany each phase. This program is designed to achieve Phase I and selected portions of Phases II and III within 6 years.

At selected times, there will be an evaluation of the effectiveness of the program in achieving targets with recommendations for new or revised objectives. The inventories, habitat improvements, and management proposals will be applied and updated in a timely and orderly manner at the state-of-the-art level. Accomplishments will be shown in the annual wildlife report, SNRA I&I Plan, special publications and other written documents.

Within each phase are activities which represent a technical approach to organize achievements. Each activity is an essential part of the phase. Their identification, selection and sequential arrangement is the organizational foundation of the plan.

FUNDING

Costs of the program vary during the years to cover capital investment costs related to habitat improvements. As progress is achieved, new priorities will influence where dollars are spent. The supply of anadromous fish will never exceed demand during this program implementation. Cost benefits should show favorable return.

Total funding of the program is spread over the 6-year planning period. Personnel, equipment, and other costs, will vary annually as each activity is started and/or completed. The Forest Service program activities will be funded through the existing system of the Forest Service budgeting process. For Phases I, II and III only Forest Service funds (M = thousand dollars) are represented in the Funding and Accomplishment bar graphs. No funding commitment is implied for either IDF&G or NMFS.

All activities that will be funded from Forest Service appropriations will be programmed and completed by (1) direct Forest Service force account work, or (2) arrangement through memorandums of understanding between F.S. and NMFS, (3) arrangement through memorandums of understanding between the F.S. and IDF&G. Funding other than Forest Service appropriations for available project dollars will be handled under memorandums of understanding currently in effect.

PHASE I INTRODUCTION

Phase I will continue to follow the SNRA General Management Plan, R-4 Wildlife Action Program, cooperative agreements and the Idaho Department of Fish and Game state plan. Maintenance of existing aquatic habitat and future planning will set the stage for all possible variations for future fishery and aquatic programs. The completion of this Fishery and Aquatic document is the first major action toward completion of the R-4 Wildlife Action Program.

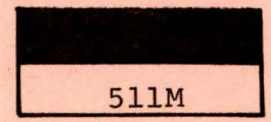
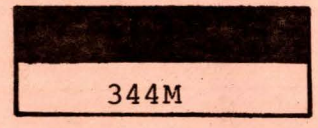
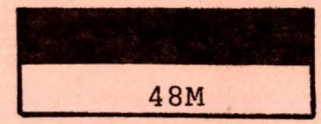
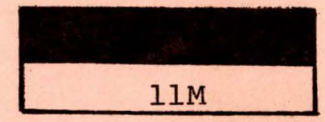
PHASE I: Insure that the SNRA maintain fish habitat and populations. Set the stage for progressive aquatic and fishery program.

ACTIVITIES	RESPONSIBILITY	FUNDING AND ACCOMPLISHMENT FY 79 80 81 82 83 84
1. Prepare an aquatic habitat action program. This will be a six-year (79-84) program of activities introduced and carried out through Phases I, II and III.	SNRA Fishery Biologist and staff.	1M
2. Synthesize available information from existing files and past surveys.	SNRA Fishery Biologist with IDF&G	6M
3. Continue and update the inventory and evaluation of irrigation diversions and fish passage problems for anadromous and resident fish. Set priorities for construction projects.	SNRA Fishery Biologist with IDF&G	9M
4. Determine the status of all stream and lake habitat for all aquatic resources. Potential population status will be formulated.	SNRA Fishery Biologist with NMFS & IDF&G	175M
5. Provide input into the lands, minerals and other related programs through all Phases. Fishery and aquatic input will be accomplished by planning team assignments.	SNRA Fishery Biologist and planning personnel	81M
6. Continue interagency coordination including meeting attendance. Update Memorandum of Understanding between IDF&G and the Sawtooth National Forest.	SNRA Fishery Biologist and and assigned staff	34M
7. Implement SNRA fisheries I&I program.	SNRA I&I Program	32M

PHASE II INTRODUCTION

At this point, the program will establish priorities to directly improve or rehabilitate fishery habitat. Following Phase I, the status of habitat components from developed guidelines will enable the specialists and managers to identify relationships associated with aquatic resources. Habitat improvement will be centered on the irrigation diversion screening, fish passage, stream clearance, watershed and water resource projects. A water quality monitoring program and a high mountain lake management program will be completed and implemented. Program objectives will be actively pursued in all phases.

PHASE II: Protection, enhancement and direct habitat improvements to the fishery and aquatic habitat.

ACTIVITY	RESPONSIBILITY	FUNDING AND ACCOMPLISHMENT FY 79 80 81 82 83 84
1. Direct habitat improvement centered on screening of irrigation diversions within the SNRA for anadromous and resident fish. Funding needs will vary depending on mitigating instream flow problems.	SNRA Fishery Biologist, Hydrologist, NMFS & IDF&G	
2. Direct habitat improvement projects such as fish passage, watershed projects and stream channel clearance will begin at this stage.	SNRA Fishery Biologist, Hydrologist, and IDF&G	
3. Criteria and guidelines for macroinvertebrates and water quality monitoring program will be established and implemented.	SNRA Fishery Biologist and Hydrologist	
4. Continued coordination in habitat improvement projects with other agencies and personnel throughout the program will assure the latest technology used when applicable.	SNRA Fishery Biologist, IDF&G, NMFS and related specialists.	
5. Implement a high mountain lake management program which will be completed to include recommendations for fishery habitat maintenance.	SNRA Fishery Biologist with IDF&G	

PHASE III INTRODUCTION

This phase will direct management of the aquatic resource to provide a continuing supply to meet public needs. At this time, a refinement of comprehensive management plans for selected species or areas will be done. The supply of anadromous fish will never exceed demand during this program; however, specific target levels, fishing success, public desires and uses can be incorporated into standards. Additional management considerations applicable to the aquatic resource or designated areas will be recommended as identified. This would result in a program integrating aquatic habitat and fish population information into a useful form for all to use. The result will be a completed addendum including recommendations for a revised or totally new planning approach for future years.

PHASE III: Monitor and maintain the aquatic and fishery habitat resource to provide a continuing supply to meet management goals.

ACTIVITIES	RESPONSIBILITY	FUNDING AND ACCOMPLISHMENT FY 79 80 81 82 83 84
1. Maintenance of existing habitat improvements will be carried on. Priorities will be revised as necessary to enhance the program.	SNRA Fishery Biologist	4M
2. Final criteria for water resource needs along with recommendations will be completed. Interagency cooperation will be incorporated. A special report of findings and recommendations will be completed.	SNRA Fishery Biologist, Hydrologist with IDF&G	66M
3. Habitat monitoring systems for trends in biotic and abiotic system will continue. Macroinvertebrate sampling and monitoring will be associated with water quality programs.	SNRA Fishery Biologist and Hydrologist	92M
4. Revise, review and update all Comprehensive Planning efforts which involve the fishery and aquatic resource.	SNRA Fishery Biologist and planning personnel	11M
5. Evaluation of merit and accomplishments of this program.	Involved and concerned personnel and agencies.	3M

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